

STATEMENT OF THE HONORABLE JANE F. GARVEY, FEDERAL AVIATION
ADMINISTRATOR, BEFORE THE COMMITTEE ON COMMERCE, SCIENCE,
AND TRANSPORTATION, SUBCOMMITTEE ON AVIATION, ON
MODERNIZATION OF THE NATIONAL AIRSPACE SYSTEM. MARCH 25, 1999.

Chairman Gorton and Members of the Subcommittee:

Thank you for the opportunity to appear before you this morning to discuss the Federal Aviation Administration's progress in modernizing the National Airspace System (NAS).

I am pleased to report that in the past 18 months, the FAA's restructured approach to modernization has produced some excellent results, in the creation of a manageable short- and long-term strategy to modernization and in the form of positive responses from many of our partners in the aviation community. Our approach can be summed up in a phrase that I am sure many of you have heard by now: evolution, not revolution. Instead of taking a "big bang" approach to modernization, we are moving incrementally, reducing the potential for cost overruns and schedule delays, and building on the successes and lessons we learn at every step.

This evolutionary approach will take us safely into the future. In this, the Year of Aviation, we have the opportunity to focus our efforts on the future of the nation's aviation system, and the legacy that we will leave to our coming generations. If we fail to be far-sighted in our approach to NAS modernization, we fail to leave an aviation infrastructure that will be able to accommodate significant growth in air transportation, adapt to emerging technologies, and save hundreds of millions of dollars in costs to all sectors of the aviation community, but, particularly, to the American traveling public.

As I mentioned, the FAA has structured our approach to NAS modernization with a particular emphasis on air traffic control modernization, the cornerstone of the NAS. We

have defined three elements to air traffic control modernization: first, sustaining our current systems and renewing the infrastructure; second, adding safety features, (safety, of course, being the FAA's primary mission); and third, improving the system to increase capacity and efficiency. This month, the agency released the NAS Modernization Plan Version 4.0, updating the FAA's comprehensive modernization strategy, and outlining the three phases in which these elements will take place. Version 4.0 takes us from today until the year 2015.

In order to sustain our current systems and renew the aviation infrastructure, we have incorporated both major and minor changes to the air traffic control system. Thus far, we have installed and integrated more than 700 major systems and equipment into the NAS, and installed more than 5,800 hardware and software upgrades. These efforts in sustaining our systems produce immediate paybacks. For instance, last year, the FAA made a \$60 million investment in system upgrades at Ronald Reagan Washington National Airport. As a result, we saw a 30 percent reduction in outages. As we continue to invest in modernization, we will continue to see increases in safety and decreases in costs.

Two weeks ago today, I was with Secretary of Transportation Rodney Slater, at the dedication of the new HOST and Oceanic Computer System Replacement at the New York Air Route Traffic Control Center. The HOST computer is the heart of the air traffic control system; it gathers all the flight data in domestic and oceanic airspace, processes it, and distributes that information to other facilities. As you can imagine, replacing a system like this is an incredibly complex and carefully orchestrated process.

However, not only were we concerned with the problems associated with the aging of the original HOST computer, we also wanted to ensure that the HOST would be "Y2K

compliant," that is, able to transition to the Year 2000 without any technology problems associated with the change to the new millenium. With these motivations, the FAA not only finished the development of the new HOST system, we brought this project in on time and on budget. The new system not only solves these two major concerns, it has brought additional benefits as well. For example, we anticipate an estimated savings of \$15.6 million in reduced electrical power consumption over a 10-year period, and reducing maintenance costs by about 65 percent. We are scheduled to replace all remaining HOST systems at the remaining 19 en route centers by October of this year.

In January, we dedicated the first of the Display System Replacements (DSR) in Seattle, Washington, replacing 30-year old equipment in the en route center, and improving individual controller workstations. DSR provides controllers with new hardware and software display systems, and provides a platform for future enhancements. We are in the process of replacing one system per month, center by center, at all 20 centers. This schedule leaves us with a completion date of May 2000, a realistic and reliable deadline.

In the terminal environment, we are making advances with STARS, the Standard Terminal Automation Replacement System, the equivalent of DSR in the terminal environment, the most intricate environment in the NAS. Although the FAA has faced a number of difficulties with the development of STARS, controllers, technicians, and management are working side by side to resolve open issues and problems. We are also in the process of developing a modified program that will help us finish STARS development while maintaining the health of our current terminal air traffic control infrastructure.

One of our most important efforts during the first phase of our modernization program is the work of the Human Factors Working Group, a group that grew out of our

development efforts in STARS. The working group, comprised of representatives from the FAA, labor union leadership, and industry, developed a process to identify, monitor, and resolve human factors issues throughout the entire acquisition process so that these issues do not arise unexpectedly and too late in a program. Since air traffic controllers play such a crucial role in the FAA's safety mission, the Human Factors Working Group makes sure that they have a voice in the acquisition of systems that affect the job that they are so committed to doing.

During this phase, we also plan to begin testing the complete Wide Area Augmentation System (WAAS) by mid-1999. WAAS works with the military's satellite-based Global Position System (GPS). The GPS signal that is available for civil use is accurate but requires augmentation for aviation use. The GPS signal does not fully satisfy civil aviation navigation requirements. WAAS would correct the military-derived signal to provide the integrity, availability, and accuracy to satisfy civil aviation navigation requirements. The planned second phase of the modernization plan includes the completion of WAAS, allowing it to provide more coverage and precision instrument approaches.

Our second element of NAS modernization, adding safety features is an effort that, as I mentioned, speaks directly to the FAA's primary mission of ensuring aviation safety. Our additional safety features primarily include advanced weather information systems. These enhancements will provide us with more precise, more accurate, and more timely weather information. In our modernization blueprint, we have included many weather initiatives, such as the Integrated Terminal Weather System, and the Weather and Radar Processor. These provide increased accuracy in terminal area and en route weather information, as well as Terminal Doppler Weather Radar for major airports where windshear and microbursts are safety issues. These are part of the next generation of communications,

navigation, and surveillance (CNS) equipment. During this phase, we will also be making the automation upgrades necessary to accommodate new CNS capabilities. And, as I mentioned, we are scheduled to complete WAAS during this phase.

The third element of modernization, improving the capacity and efficiency of the system, means fewer delays, lower costs, and better service. The crux of this third element is Free Flight Phase One. Free Flight Phase One is the first step to an innovative approach to air traffic control, moving from "control" to air traffic "management." Free Flight Phase One is designed to move the NAS from a centralized command-and-control system between pilots and air traffic controllers to a distributed system that allows pilots, wherever practical, to choose their own route and file a flight plan that follows the most efficient and economical route. A digital data link provides improved communications between the air traffic controller and the pilot. The data link transmits much of the air-to-ground and ground-to-ground information, reducing the need for voice communications, reducing workload for controllers and pilots, and reducing the chances of garbled or misunderstood messages.

Free Flight Phase One represents an historic point in the FAA's history. Under this program, we have reached a consensus with industry that is virtually unprecedented: an agreement from all sectors of the aviation community. Our agreement with the industry is simple: we deploy the systems and the remainder of the community measures the results and tells us how it is working. After receiving this valuable feedback, we then decide upon our next steps. Maintaining this consensus is an enormous challenge for the FAA, particularly in an industry where competition is the guiding principle.

Moreover, Free Flight Phase One is a perfect example of the benefits of the FAA's "evolution, not revolution" approach to NAS modernization. Under this building block

approach, we not only reduce the risks of cost overruns and schedule delays, we take into account the changing nature of emerging technologies, ensuring that we not only keep abreast of the daily changes in technology, but that we can take advantage of those changes as well. The FAA's NAS modernization plan is a forward-looking approach that is scheduled to take place over the next 15 years. We want to make sure that in the future, we are not still wedded to a plan that is already obsolete. With our new incremental, evolutionary approach, not only are we able to accommodate changes in technology, we can incorporate them into our modernization approach as well.

Because NAS components are interrelated, we have also developed a database to track the modernization plan and demonstrate how factors such as funding or schedule decisions affect other programs and modernization efforts. This database will give the agency quick access to the significant amount of technical, schedule, and cost information in Version 4.0, as well as provide information on hypothetical scenarios that might affect the modernization plan. The NAS is far too complex for the FAA to navigate without taking full advantage of available database technology.

As for our next steps in modernization, we are currently exploring several possibilities. Here, we strive to strike the right balance between looking towards the future and not biting off more than we can -- or should -- chew. Again, the FAA wants to modernize the NAS through evolution, not revolution. As we modernize the NAS, we continue to anticipate future needs, assessing how viable various options are. For example, by the time we are ready to tackle Free Flight Phase Two, we will have assessed several options for Phase Two, from national deployment of Free Flight Phase One to developing even more advanced technology that improves upon Free Flight Phase One. As we draw closer to 2015, we will learn more lessons and experience more successes, in order that we may ultimately make better decisions.

Modernization of the NAS is a significant challenge for the FAA. In the past, Congress has supported us extensively in its efforts toward modernization and reform, and I look forward to continuing that working relationship with you, Mr. Chairman, and the Members of the Subcommittee.

Thank you for the opportunity to appear before you this morning. That concludes my prepared remarks and I would be pleased to answer any questions you may have.